UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

***

INFORMAL PUBLIC HEARING:

PETITION PURSUANT TO 10 CFR 2.206, DONALD C. COOK

NUCLEAR PLANTS UNITS 1 AND 2

DOCKET Nos. 50-315 and 50-316

Two White Flint North

Room T9A1

11545 Rockville Pike

Rockville, Maryland

Wednesday, August 19, 1998

The public hearing commenced, pursuant to notice, at 9:00 a.m.

APPEARANCES:

On Behalf of the NRC:

BRUCE BOGER, Chair

Acting Associate Director for Projects

ELINOR ADENSAM, Acting Director

Division of Reactor Projects West

JACK GROBE, Director

Division of Reactor Safety, Region III

RON BELLAMY, Acting Project Director for PD33

JOHN STANG, D. C. Cook Senior Project Manager

[continued]
and NRR Petition Manager

On Behalf of the UNION OF CONCERNED SCIENTISTS:
ANN HARRIS, We the People of Tennessee
DAVID LOCHBAUM, Nuclear Safety Engineer
JIM RICCIO, Staff Attorney
Public Citizens Critical Mass Energy Project

On Behalf of the AEP:
ROGER POWERS, Senior Vice President
JOHN SAMPSON, Site Vice President
DON HAFER, Chief Nuclear Engineer
JEB KINGSEED, Director, Regulatory Affairs

P R O C E E D I N G S

[9:00 a.m.]

MR. BOGER: Good morning. My name is Bruce Boger, I am the Acting Associate Director for Projects in the Office of Nuclear Reactor Regulation.

We are meeting this morning to conduct an informal hearing on the 10 CFR 2.206 Petition submitted by the Union of Concerned Scientists concerning the D.C. Cook Nuclear Power Plant.

The purpose of the hearing is to obtain additional information related to the petition. The petitioner, the licensee, and the public will be afforded an opportunity to speak. The information provided today will be considered by the NRC staff in its evaluation of the petition.

I have been designated by the Director of the Office of Nuclear Reactor Regulation to chair this meeting.

I apologize in advance for sometimes calling it a meeting and an informal hearing. You know, it is an informal hearing, but I will lapse into meeting.

This hearing is being transcribed to produce a formal record. That record will be made publicly available.

At this time I'd like to introduce the participants in this morning's meeting. Providing the presentation on behalf of the Union of Concerned Scientists is Mr. David Lochbaum, nuclear safety engineer. Dave, could

you introduce the other members of your group, please?

MR. LOCHBAUM: Thank you and good morning. I'm very appreciative today to be joined by Ann Harris who is with We The People of Tennessee. She's also a spokesman for the National Nuclear Safety Network and lives within the evacuation zone for the Watts Bar Nuclear Plant.

On my right is Jim Riccio the staff attorney for the Public Citizens Critical Mass Energy Project who was working in the Atlanta Office for a couple of years on TVA issues and Watts Bar licensing issues.

Thank you.

MR. BOGER: Thank you, Dave.

Providing the presentation on behalf of the licensee is Mr. John Sampson, D. C. Cook site vice president. John, could you introduce the members of your group, please?

MR. SAMPSON: Certainly. Good morning.

On my left is Mr. Bob Powers, our chief nuclear officer, to my right is Mr. Don Hafer, our chief nuclear engineer, and at the end of our table is Mr. Jeb Kingseed, the director of regulatory affairs.

MR. BOGER: Thank you. There are several members of the NRC staff present this morning. The D. C. Cook senior project manager and NRR petition manager is John Stang.

John, could you introduce the other members of the staff that are at the table with you?

MR. SAMPSON: Sure. To my right is Dr. Ron Bellamy, the Acting Project Director for PD33. To his right is Jack Grobe, the Director of Division of Reactor Safety, Region III, and on the end Elinor Adensam, the Acting Director of Division of Reactor Projects West.

MR. BOGER: Thank you, John. I notice that there are other members of the NRC staff that are in attendance as well as several members of the public.

I bid you all welcome to this meeting and ask that those of you that are in attendance sign the registration sheet at the back sometime today.

In addition, I believe the Region III office is on the phone line. Is that still true?

MR. SAMPSON: That's correct.

MR. BOGER: Okay. I'd like to thank each of you in advance for your willingness to participate in the Commission's decisionmaking process.

Before we get started on the presentations I would like to provide some information on the 2.206 process. I'd like to provide a summary of the petition and also an overview of today's proceedings.

10 CFR 2.206 was established by the Commission to provide a formal procedure that allows any person to file a

request to institute a proceeding to take enforcement action and requires that the petition be submitted in writing. The petition must request that a license be modified, suspended or revoked, or that other appropriate enforcement action be taken and must provide sufficient facts that constitute the basis for taking the particular action.

In addition, the 2.206 review process provides under certain circumstances the opportunity for an informal hearing.

With respect to the petition, on October 9, 1997, the Union of Concerned Scientists submitted a 2.206 petition to the NRC. The petition requested that the NRC modify, revoke, or suspend the operating licenses for D. C. Cook Nuclear Power Plant, Units 1 and 2 until such time that there is reasonable assurance that all significant non-compliances have been identified and corrected.

The petition from the Union of Concerned Scientists was submitted because of inspection findings from the architect engineer inspection performed by the NRC in August and September of 1997.

In addition, the Union of Concerned Scientists requested a public hearing on this issue to be held in the Washington, D.C. area.

On January 12, 1998, a meeting was held with the Union of Concerned Scientists and additional issues were

raised concerning the D. C. Cook nuclear power plant. The Union of Concerned Scientists summarized these in a January 12, 1998, letter to the NRC. The following is a summary of the concerns which will be evaluated under the 2.206 process and included in the director's decision on the petition.

The first issue was ice condenser issues; a second issue was licensee's use of the 10 CFR 50.59 process; the third issue was the scope of the licensee's review of engineering calculations and the NRC assessment of that review; a fourth issue was missing or inaccurate net positive suction head calculations for safety-related pumps; and the fifth issue was the accuracy of the licensee's February 6, 1997, response to the NRC request for additional information pursuant to 10 CFR 50.54(f).

There were other concerns that were raised in that letter and during the meeting, but those will be handled separately from the petition process.

This additional information that was provided by the Union of Concerned Scientists was determined by the NRC staff to satisfy the criteria for holding an informal hearing and this is why we're here today.

The outline for the hearing will be conducted in the following manner. The Union of Concerned Scientists will be allowed approximately 45 minutes to articulate the basis for the petition and issues raised in their addendum

in January, then the NRC staff be allowed approximately 15 minutes to ask questions to clarify the statements. Next the licensee will be allowed approximately 45 minutes to address issues raised in the petition and addendum. After that the NRC staff will again be permitted about 15 minutes for the purpose of clarifying the remarks. At that point in time I would solicit public comments which are related to the petition. After that closing statements by the petitioner and by the licensee will be entertained.

I do want to keep us on track and in focus. The nature of this informal hearing is to address the petition that was submitted by the Union of Concerned Scientists and we need that information and clarifying remarks on the petition to help us make our director's decision.

With that I'd like to turn it over to Dave Lochbaum for the petitioner's side.

MR. LOCHBAUM: Well, you all have a copy of the handout anyway, so I'm not going to worry too much about the focus.

Well, thank you, my name is David Lochbaum, I'm a nuclear safety engineer for the Union of Concerned Scientists, the organization that brought the 2.206 petition.

Mr. Boger kind of went over this, but to review why we're here today, September 8th of 1997, as a result of

the NRC's architect engineer inspection at D. C. Cook that looked at two safety systems and found enough problems in both of those systems that both units of D. C. Cook had to shut down. Roughly a month later UCS petitioned the Nuclear Regulatory Commission to prevent restart at D. C. Cook until other safety systems at the plant were certified to be capable of doing what they needed to do.

On December 2, 1997, D. C. Cook's owners told the NRC the plant was ready for restart. On January 12, 1998, the UCS met with the NRC to outline our concerns and to target what we thought were safety concerns of the plant.

The very next day the NRC inspectors were at D. C. Cook and began a series of inspections of the ice condensers, one of the issues we raised on January 12. As a result of those investigations 29 violations of federal safety regulations were later documented.

July 27, 1998, D. C. Cook owners report that in their review of 22 other safety systems at the plant there have been nearly 500 problems identified that have to be resolved before restart.

Today UCS is here to ask the NRC for a meaningful civil penalty be issued against D. C. Cook before the plant is allowed to restart.

A little background on why the NRC went to D. C. Cook last summer. As a result of the problems identified at

Millstone, it was discovered that all units at Millstone had operated outside their design and licensing basis. As a result of that finding in October 1996, the NRC issued a letter to all licensee except Millstone asking them to look at their availability and adequacy of the design basis.

D. C. Cook's owners responded to that request in February of 1997 outlining what they had done and why they had assurance that everything was okay at their plant.

In August of 1997 the NRC team arrived at D. C. Cook as one of six team inspections to look at architect engineer issues. This team looked at two of the more than 60 safety systems at the plant, the RHR system and the component fueling water system.

There was an enforcement conference in April that lasted several hours that reviewed some of the findings from the NRC, so I won't go over in detail what those findings were. But to briefly summarize some of those findings, the NRC found that there was a wall in the reactor containment building basement that prevented sufficient water from being available following an accident such that the reactor core might not have been adequately cooled.

It also found that fibrous material inside containment could block flow of water to safety systems even if this wall had not been there. It found that a 1992 procedure change at the plant had created the opportunity

for a single failure to disable all the core cooling systems at the plant.

The NRC found that in 1988 the plant had operated outside its design basis for 22 days when the lake temperature exceeded the capability of the cooling water systems.

The NRC also found that vents that had been installed at the plant for secure safety reasons in 1979 had been filled in with concrete sometime in the 1990s which prevented that safety feature from being performed.

What in these findings concerned UCS? We looked at -- on an average year we look at more than 100 inspection reports. We don't file -- this is the first petition we filed, so we don't jump at shadows or cry wolf. What we did find is that both of the systems examined by the NRC last September had been extensively reviewed by the plant's owner in 1992. That review had reported that no problems were found, no serious problems were found.

We found that beginning in 1988, the NRC had repeatedly warned the plant's owners about fibrous materials inside containment -- all of these warnings went unheeded. We have some, but not all of those warnings.

May 19, 1988, information notice 8820 to all owners including D. C. Cook, potential for loss of post-LOCA recirculation capability due to insulation debris blockage;

almost the exact problem that shut down the plant in 1997.

November 21, 1989, information notice 8977, debris and containment emergency sumps and incorrect screens configurations.

January 30, 1990, Information Notice 90-07, new information regarding insulation material performance and debris blockage of PWR containment sumps.

May 11, 1993, NRC Bulletin 93-02, debris plugging of emergency core cooling suction strainers.

April 26, 1993, Information Notice 93-34, potential for loss of emergency core cooling function due to accommodation of operational and post-LOCA debris in containment. There's a May 6, 1993, supplement to that information notice.

October 30, 1996, information notice 9659, potential degradation of post-LOCA recirculation capability as a result of debris.

We noticed that the NRC inspection finding recorded that some of this fibrous material was installed during 1995 at D. C. Cook after many of these warnings had been issued. We can't explain why they were not followed.

In 1993, the NRC also warned the plant's owners about the very same procedure problem that was created by the change in 1992. The very year after D. C. Cook's owners made the change the NRC issued another warning memo about

that potential. That warning also apparently went unheeded.

In October 1997, D. C. Cook's owners planned -- or proposed to fix the problem with the water shortage of that wall in the basement by taking credit for ice melt from the ice condenser. We knew, the NRC knew and D. C. Cook's owners knew about generic problems affecting the ice condenser if these problems were not addressed in the owner's proposal to solve the first problem.

At this point I'd like to ask Ann Harris to come up and explain why UCS knew and the NRC knew about the ice condenser problems.

MS. HARRIS: Good morning, Mr. Lochbaum and members of the Nuclear Regulatory Commission and Representatives of the D. C. Cook Nuclear Program, other safety advocates here.

Thank you for the opportunity to participate in this public meeting.

On April 26th, 1996, one of this nation's leading experts on ice condenser coolant systems, notified the Tennessee Valley Authority (TVA) that a potential hardware problem existed at the Watts Bar Nuclear Plant. TVA and the NRC were on the threshold of licensing Watts Bar Nuclear Plant after 24 years and $11 billion.

The next scenario is legendary to those of us familiar with TVA. This 17-year TVA employee was sent into

the closet, not permitted to follow, or be a part of the resolution of the safety issue. And as a result of this fuel load delaying problem, TVA gave notice of lay-off and proceeded to use this career employee to train his replacement since this employee did not have the, quote "required background to continue with the ice condenser system."

The employee trusted TVA management to resolve the problem. During this process the employee contacted all of his fellow ice condenser engineers at D. C. Cook, Duke Power's Catawba and McGuire plants as well as the TVA's Sequoyah nuclear plant. And the TVA employee contacted the supplier of the system, Westinghouse. Good engineering practices wouldn't you all agree?

All of the contacts at each of the plants confirmed existing problems with their ice condensers. One of the contacts went so far as to praise the employee for raising the problem.

During the days and weeks preceding the Watts Bar licensing, public meetings were held with TVA and the NRC on the same team. During these meetings the ice condenser issues were raised with both TVA and NRC's Region II. On December 1, 1995, the NRC sent TVA a notice of inspection of the Watts Bar ice condenser. Surprise, Surprise. Both the ice condenser and management sensitivity to employee

concerns received glowing assessments from NRC inspectors.

Permit me to quote language from the that inspection report 40-390/95-74:

". . . several baskets. . .had to be thermal drilled . . . to add more ice. . . to eleven stuck baskets due to ice build up. The system engineer stated that condensation was normal due to work in containment raising humidity levels. The inspector concurred with this and concluded the condensation would be eliminated when containment ventilation systems were returned to normal. . .similar to . . . upper plenum when work was completed. The inspector attended an all site supervisor's meeting. . .for raising safety concerns. . .and . . . harassment . . . would not be tolerated."

Perhaps the most telling NRC position is the statement, quote: "The improvement in operation and housekeeping of the ice condenser was considerable."

When TVA and the NRC licensed Watts Bar in November of 1995, this TVA employee recognized that the ice condenser problem was going to be ignored and he proceeded to NRC's Region II "block hole" of allegations and gave information to Watts Bar resident inspector on December 31, 1996. On January 17, 1997, this safety-conscious TVA employee made a career-ending decision to file a complaint with the Department of Labor's Wage and Hour under the

Energy Reorganization Act for intimidation and harassment.

In late January of 1997, this employee felt that he was not being taken seriously as to the significance of this issue and more and worse abuse was taking place. He had received death threats not only at work, but also at his home, both verbal and written.

As a result he sought me out as a long-time nuclear safety advocate for TVA employees. With my years of knowledge and considerable expertise related to employee abuse in the nuclear industry, I told this person that not only was TVA abusing him, but so are the NRC's Region II boys.

With knowledge and respect for the Union of Concerned Scientists nuclear safety advocate, Dave Lochbaum, I took this employee to Washington in March of 1997 to meet with Mr. Lochbaum. Prior to meeting with UCS we met with the NRC's Office of Inspector General. Our next step would be the media. I had taken this employee through all but two of the avenues open to whistle-blowers in the nuclear industry, the last being Congress.

The DOL investigation determined that the ice condenser issue caused panic in TVA management. When the employee recognized that his choices were to do the right thing and report the safety problems and bring down TVA's wrath or to overlook the matter and be a hero to TVA

management, it is evident that the employee followed his conscience and paid the price. That investigation was concluded in September 1997.

Clearly, throughout this entire process the Watts Bar employee trusted both TVA management and NRC to correct the problems with the ice condenser.

When I read that the D. C. Cook nuclear facility was about to pay a price for the abuses at TVA, I contacted Dave Lochbaum again and asked that he look into the issues at Cook. Low and behold, a major problem exists. When NRC Region II sent a response to the TVA whistle-blower, they said that they had called Duke Power on the phone and Duke said there is not a problem.

Since telephone calls were the extent of the investigation, the whistle-blower read the report and went back to Region II with questions that were requested when the initial investigation did not resolve his issues. When Region II got the questions that needed to be asked, Region II's OI returned a letter stating that since the alleger had asked questions instead of making statements of allegations, the issues did not meet the standards for allegations and therefore the issues were not safety-related and Region II closed them out.

Now, this past Catawba -- one of Duke's plants -- has shut down due to problems with the ice condenser system.

At the last Watts Bar outage over 200 ice baskets were serviced. During this time TVA has an open Design Change Notice, a DCN, at the Sequoyah nuclear plant that will work on three bays at each outage to change the buckled flooring inside the ice condenser. At this rate it will take seven years to fix the floor.

This morning the Watts Bar ice condenser is experiencing such high humidity that water is freezing on the intermediate deck doors requiring personnel to enter ice condenser containment several times each week to ensure that the doors are operable in case of an accident in defiance of purging attempts. And the system is being degraded daily. So much for the operable ventilation systems.

The NRC has forced a career nuclear employee to seek resolution to safety issues totally outside you as regulators. The industry is paying a high price for Region II's lazy and incompetent practices in dealing with safety issues in its own back door. We were forced to turn to UCS and the able Dave Lochbaum for support and resolution. This meeting today would not have ever happened if not for three people that trusted each other to do what is the lawfully and morally; Dave Lochbaum, The TVA whistle-blower and myself.

The NRC's NRR has stated that they are going to trust the TVA to inspect themselves as the NRC looks over

their shoulder. Well, that is the same scenario that gathered all of us here today. So, where is the NRC's safety conscience? TVA's ability to lie to this Commission and get away with it is legendary. Where is the public trust supposed to go when safety-conscious nuclear employees give up careers, homes, families, friends, and most of all trust in their government to do what is right for the public health and safety? Probably to hell in a hand basket.

In the ruling for the TVA whistle-blower's DOL hearing the ALJ stated that TVA's managers were not trustworthy because of their mendacity. In other words they were lying. With all the information I have given to this panel, I will quote from a letter that the former EDO James Taylor wrote to Oliver Kingsley in August of 1991 when TVA was requesting restart of construction at the Watts Bar site:

"On numerous occasions over the years, the NRC has heard various TVA management teams describe both the weaknesses in past corrective action programs and the intent to address root causes in future programs. . . . However, I am not persuaded that such an action can help bring about the necessary changes any more readily than the multitude of program changes TVA has unsuccessfully implemented at Watts Bar since the shutdown of its nuclear program in 1985."

D. C. Cook representatives, if I were in your

shoes, I would closely look at how your employees fear retribution for raising safety issues in your organization since your employees knew of this problem years ago.

NRC, I see no reason to believe that you're willing to stop TVA abuses anymore now than you were seven years ago. Your Region II boys and OI have no shame when it comes to abusing TVA employees. Therefore, with that knowledge in mind, we forgive you in headquarters and in the region for your abuses. But will the public be so understanding as they begin to recognize that the NRC is the culprit for higher rates when safety issues go unresolved and end up costing billions. Will it take the ultimate accident to stop this way of doing business?

How much money will you spend before you put Mr. Lochbaum and myself out of business? Many, many billions I am sure.

Thank you.

MR. LOCHBAUM: I have a few questions for Ann just the clarify the employment. In your statement you mentioned that the TVA whistle-blower filed a complaint with the Department of Labor, what is status of that complaint?

MS. HARRIS: He won at the initial investigation, he also won -- we got a favorable ruling through the Administrative Law Judge and TVA appealed it on to the Secretary of Labor.

MR. LOCHBAUM: You also stated that the TVA whistle-blower contacted counterparts at D. C. Cook and the other ice condenser plants. Lest anyone think that that was an unsubstantiated claim, I have the ruling from the April 1st, 1998, Administrative Law Judge, Department of Labor case, recommended decision and order. We'll leave out the names just for obvious reasons. This is on or after April 12th, 1995. The TVA employee, quote, "Reported his discovery to Westinghouse representatives Gordon Yetter and Chuck Scrabis", well not all names, I guess.

[Laughter.]

MR. LOCHBAUM: Yetter and Scrabis, "Scrabis remarked that if the screws were in fact ice basket screws, as they were later found to be, such a finding could have a major impact on fuel loading, not only at Watts Bar but at six other nuclear plants which use similar Westinghouse ice condensing systems, the screws from the same supplier. These plants included Sequoyah, Duke Power, Catawba, D. C. Cook, and two other plants in Japan and Finland." end quote.

Later on the TVA employee, quote, "Then called counterparts at D. C. Cook," and there's two names mentioned I'll leave out, "and found at that they had the same screw problem and had to use nuts and bolts to hold the baskets together." end quote.

I don't know for sure, but I would imagine nuts

and bolts are not on the design drawings as are the metal screws.

Also, I don't know if anybody knows this, but Ann has prevailed in six out of six Department of Labor complaints filed against TVA; is that correct?

MS. HARRIS: That's correct. The most recent just ended, guys, I'm free.

MR. LOCHBAUM: I've never filed a complaint, so I'm kind of new to that game. I read this recommended decision and order in the TVA whistle-blower case which I believe you have also read. I concluded that the Administrative Law Judge determined that TVA had discriminated against the TVA whistle-blower for raising safety issues; is that your understanding as well?

MS. HARRIS: That's true.

MR. LOCHBAUM: 10 CFR 50.7 does not allow nuclear plant owners to retaliate against workers raising safety issues. What action has the NRC taken against TVA in this case?

MS. HARRIS: Nothing. No violations, nothing.

MR. LOCHBAUM: What actions has the NRC taken against TVA in your opinion?

MS. HARRIS: None.

MR. LOCHBAUM: At least they're consistent.

Watts Bar is located in what NRC Region?

MS. HARRIS: Region II.

MR. LOCHBAUM: D. C. Cook is located in what NRC Region?

MS. HARRIS: Region III.

MR. LOCHBAUM: And D. C. Cook, by the way, is the only ice condenser plant located outside NRC Region II.

Thank you, Ann.

MS. HARRIS: Thank you.

MR. LOCHBAUM: We have a video tape we would like to roll now.

[Video presentation.]

MR. LOCHBAUM: I will briefly describe what the tape might have shown. We have a copy of the tape if everybody would like to stop by to see it.

The NRC has had this tape since March of 1997. It runs for about an hour and this is about a five-minute highlights.

The video showed the debris and damage inside the ice condenser at the Sequoyah nuclear plant following the 1992 event where 27 of 48 ice condenser doors were blocked shut on Unit 2 and 11 of 48 ice condenser doors were blocked shut in Unit 1.

The tape is amazing, you'll have to take my word on that. But it looks somewhat like the debris in the Titanic, the debris that filled the Titanic. It's amazing

how bad the material condition of that ice condenser is.

We knew about that tape and we knew about that damage in October of last year when we filed the petition. D. C. Cook is twice as old, at least twice as old as the Sequoyah plant was. It occurred to us that the -- we knew about the ice basket screws, we knew about the debris and the material condition problems. It was somewhat -- D. C. Cook might have similar problems.

Is that it.

[Video presentation.]

MR. LOCHBAUM: Like I say, this is not an overhead aerial view of the Grand Canyon or anything like that, that's the ice condenser concrete that is broken because of repeated freezing, ice cracked the concrete quite badly, the concrete -- or the floor buckled upward, blocked the doors from moving open in case of an accident. When they went in during one outage 27 of 48 doors would not open. The reason they give you 48 is not so that someone can't open them, we actually need more than 19 of them to open.

What you see is various cracks. This ledge here is not supposed to be a ledge, this crack is obviously not supposed to be a crack.

That ledge stands up about an inch or two as a result of the freezing of the ice. You know, the design should have considered that ice might be there. It is an

ice condenser.

MS. HARRIS: This ice is caused from water -- condensation coming down underneath a fibrous concrete floor and then whenever it freezes and when it retracts and contracts, going back and forth well then the floor will eventually erupt.

MR. LOCHBAUM: This is a fiber optic cable that was run through underneath the floor to see some of the debris through it. The motion is kind of jerky because the cable kept getting caught on these jagged edges.

You can see the delamination of the concrete, some of the other problems with the materials inside the ice condenser. This ice condenser, by the way, is supposed to handle the pressure following an accident. It's falling apart by itself here. You'll see, just falling apart after about ten years worth of operation.

Ann mentioned in her statement that they're going through three bays an outage to repair some of this damage. There are 24 bays, so it will take them -- you said seven years. Actually, on a year-and-a-half, two-year operating cycle, it could take them a couple of decades to get to the last bays because --

MS. HARRIS: Hopefully we won't have an accident.

MR. LOCHBAUM: Some more of the damage and the debris. The tape -- original tape runs for like an hour.

It just goes through various portions in the Unit 2 ice condenser and shows the extent of the damage. This is done a sunset, this is the light reflecting off of some of the concrete.

At various pieces you can see some of the ice still there and there's not supposed to be ice there. This is ice that's underneath the floor slab or water that got underneath there, ice didn't get there, when it got cold the ice came. But the water is not supposed to be there and therefore the ice is not supposed to be there.

This is an individual inside the -- this is not meat, by the way, this is an individual inside the Sequoyah ice condenser. And the rest of the tape just shows the extent of the damage. Like I said, it goes on for an hour. None of it is duplicated, at least the areas viewed are not duplicated. The damage is replicated throughout the ice condenser.

So we knew about that information, the NRC knew about that information, D. C. Cook knew about that information before December of last year.

So what did we seek in our petition last October? All we asked for was, before the plant restarted was that there be reasonable assurance that the safety system conform with their design and licensing basis before the plant restarted. We also asked for a public hearing to present

the information on our concerns.

I need to point out that when we filed the petition in October the plant was, according to the NRC Region III office, was within days and weeks of restarting. The inspection report itself from the inspection had not been issued, so we had to go on some meetings and the confirmatory action letter had been issued in September, we went on the best information we had available.

What was wrong at Cook, what has been found wrong? Both ice condensers were broken and there's many reasons for that. The ice in both condensers had been melted or in the process of being melted to allow the repairs and inspections to be made.

As of July 27, 1998, 494 problems in 22 safety systems had been identified by the plants owners as requiring resolution before restart.

We need to point out that 13 of these 22 safety systems had been extensively reviewed under the design basis reconstitution program in the early '90s and no such problems were found during that effort.

What has UCS concluded from all this?

Basically we concluded that the ice condenser problems alone substantiated the concerns we raised in our petition and its supplement. Even if those problems had not been identified, the nearly 500 problems with safety systems

found by the plant's owners that have to be fixed before restart substantiates the concerns raised in our petition and its supplement.

We also need to point out that even if no problems had been identified during safety system reviews and no problems have been identified in the ice condenser, the concerns in the petition were valid. There was a clear and present danger obvious in October of 1997 when we filed that petition.

The findings or lack of findings didn't change the validity of the concerns raised in that petition. You can't do a sample of two things, find both of them wrong, and suggest that the rest of them are okay. That was the crux of the petition.

What are we asking for today? I also need to point out that in December of 1997 -- before I get to this, D. C. Cook's owners told the NRC that they were ready -- the plant was ready to restart. The actual words were, and I quote, "it is our assertion that Cook Nuclear plant is ready to resume full power operation and will do so with high standards of safety in both operational policies and safety equipment capabilities." end quote.

What do we think needs to be done now? Well, the ice condenser problems are being fixed. We're glad about -- at least at D. C. Cook. The other safety systems are being

reviewed, those problems are being identified and will be addressed before restart. That is another thing we asked for and we're glad about that.

The last thing that we think needs to be done before restart is that the NRC needs to impose a Millstone-scale civil penalty before allowing D. C. Cook to restart.

Last December the NRC imposed a $1.2 million penalty on Millstone's owners for the problems -- longstanding safety problems at that plant.

The year-plus outage at D. C. Cook is expensive, but that's the price being paid to allow the plant to restart. That's not the price paid for past sins at this plant.

We feel a Millstone-scale civil penalty is needed to remind D. C. Cook's owner that nuclear safety cannot be overlooked in the future.

We had a few questions both internally and with people we've talked to in this asking whether a Millstone-scale penalty might be too much. And we looked at that. What we did is we figured up what the NRC could impose based on the number of violations and how long they lasted. By statute the NRC can a licensee up to $55,000 a day for each violation; $55,000 per day per violation. And so some of these dated back to the original construction of

the plant when the rules were different. We used $50,000 per day in our calculation.

Going through the enforcement actions, in 1988 operation outside design basis for 22 days is 2.2 million; 1992 the introduction to single failure for the next several years is 173 million; 1993 inadequate response to NRC Bulletin on fibrous material, 146 million; 1998 59 violations that were discussed in the April Enforcement Conference. If we assumed that each of those violations existed for two years, which I think is a conservative assumption, we could probably document that with a finer detail and go out a few more years, but just for the purposes of argument we assumed two years, that came out to $4.3 billion for a total of $4.6 billion worth of civil penalties.

Obviously we're not advocating that that size fine should be imposed. That would be counterproductive. That money can better be used to making the plant safe. But a reasonable or meaningful civil penalty needs to be imposed so that the proper focus on safety is maintained in the future.

Why does it matter?

In 1982 the United States Congress put out a study on what would happen if there was a reactor accident in a plant. D. C. Cook was looked at among this list and showed

that for Unit 1, this is 1980 dollars, 1980 census data; a reactor accident on Unit 1 could cause 19,000 [sic] prompt fatalities, 80,000 injuries, and 13,000 cancer deaths -- meaning if somebody dies more than a year later -- and $91.9 billion dollars in damages. Similar results in Unit 2, it's a little bit higher powered, that's why the numbers are a little bit higher.

If you look at the safety systems that would not or may not have worked at D. C. Cook and how long they may not or could not have worked, these people living around this plant were protected as much by luck as by skill and design of the facility and that is not an acceptable way to protect the public. That's why we think the civil penalty needs to be meaningful and needs to be imposed before restart.

I appreciate the opportunity for this hearing and would be glad to entertain any questions from the NRC.

MR. BOGER: Thank you, David.

NRC staff, questions or clarifications?

MS. ADENSAM: Mr. Lochbaum, this is Elinor Adensam with NRC staff, I did have one question of clarification with regard to your statement that if no ice condenser and no safety system problems had been found, you felt your concerns were valid. In your discussion you then said something about identifying two concerns, so I want to

understand, when you talk, do you mean no other problems other than the ones raised in the AE inspection? I guess that's the point of clarification.

MR. LOCHBAUM: Yeah, I think so. If you look at the two issues raised or actually the seven issues in the confirmatory action letter we researched back the history of those seven issues and we found that the two safety systems that were looked at by the NRC had been extensively looked at by the licensee and no problems were found. So that suggested to us that the -- contrary to the February 1997 response from this licensee about the adequacy and design basis that that adequacy was not there and that other safety systems need to review to make sure that the problems found by the NRC in the AE inspection were not the isolated case and whether the problem was a little bit bigger than was there.

In our minds, even if that review had shown no other problems, that was a question that needed to be asked and answered before this plant was allowed to be safely restarted.

MS. ADENSAM: Thank you.

MR. GROBE: Just one or two questions. This is Jack Grobe from Region III. Ms. Harris, you indicated that in your work with the Watts Bar individual on ice condenser issues at Watts Bar that the Cook plant and Westinghouse

individuals were contacted. Do you have any additional knowledge on what actions may have been taken by Westinghouse or Cook regarding the Cook ice condenser on the issues that were raised at Watts Bar?

MS. HARRIS: Well, since the issue was raised in the summer of 1995 and nothing was done until 1997, I must assume that nothing was done. Westinghouse put together a response to TVA for licensing purposes, but it never did address the screw issue. In fact, it very cleverly sidestepped the whole issue.

MR. GROBE: One other question, Mr. Lochbaum, regarding the information that you showed on the video, damage in the Sequoyah flooring in the ice condenser, are you aware of any actions or any information regarding the Cook ice condenser that's similar to what was existing at Sequoyah?

MR. LOCHBAUM: No, we don't have a tape inside D. C. Cook at all. We don't have the whistle-blower or the information on D. C. Cook like we do at the other plants.

MR. GROBE: Okay. Thank you.

MR. BOGER: Any other questions from the NRC staff?

[No response.]

MR. BOGER: I would point out that there are some issues that were raised in the Union of Concerned

Scientists' presentation that will -- aren't directly related to the petition that we will have to follow up in other forums through the NRC -- other processes through the NRC. Information related to condition of other power plants in other regions. NRC behavior, if I can use that term -- response. But those will not be handled as part of the petition.

Okay. At this point in time I'd like to turn it over to the licensee for their presentation.

MR. SAMPSON: Good morning. I am John Sampson the site vice president of the Donald C. Cook nuclear plant. I am accountable for safe, reliable, and environmentally-sound operation of the plant.

I am also the senior manager responsible for oversight of the D. C. Cook restart plan. In this responsibility I oversee day-to-day operation of the plant and implementation of our formal restart plan.

Cook nuclear plant is owned and operated by the Indiana Michigan Power Company which is a wholly-owned subsidiary of American Electric Power. Our plant is located in Southwest Michigan and represents approximately 2200 megawatts of electrical generation capability.

I would like to thank the NRC for this opportunity to address the concerns stated in the Petitioner's letters dated October 9, 1997, and also January 12, 1998. In

keeping with the 2.206 process we are here today to provide information to the NRC staff for use in responding to this petition.

The petition calls for the revocation, modification, or suspension of the Cook operating license until there is reasonable assurance the plant systems are in conformance with design and licensing basis requirements. As a licensee and the operator of the Cook nuclear plant, it is our position that this request is not warranted for the following reasons:

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First, we exercised appropriate conservative decisionmaking when we voluntarily took actions to promptly shutdown the plant during the NRC's architect engineer design inspection last September. The plant is being maintained in a safe shutdown condition.

Second, we have implemented a rigorous restart plan which includes comprehensive, corrective, and preventive actions from approving our plant, our programs, and our human performance. This restart plan encompasses the short-term assessment discussed in the NRC's confirmatory action letter.

System readiness reviews, program reviews, and functional area reviews are being performed as a part of the restart plan to reasonably assure that our systems are

capable of performing their intended safety functions and that our organization is ready for a safe disciplined restart. In essence, our restart plan addresses virtually every action requested in the 2.206 petition.

Lastly there are NRC processes which provide appropriate oversight of our restart effort. The NRC has issued a confirmatory action letter, has established an 0350 restart panel and will continue assess our efforts through the inspection process.

These existing processes are substantial controls that will ensure appropriate corrective and preventive actions are performed prior to restart.

You have my personal assurance that we will not restart the D. C. Cook plant until the plant and our organizations are ready.

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So my presentation today will include an overview of our restart plan as well as discussions of our system reviews, our revalidation of the updated final safety analysis report, and our program reviews. I will close my presentation with a discussion of the comprehensive corrective actions were are taking to address our ice condenser issues.

Next slide, please?

And to make this work and be a little bit informal

here, this is nearly impossible to see in the back of the room, but on the handouts that you're looking at, the piece of this that I want to talk -- the reason I'm using this -- I'm sorry -- this page is directly out of our formal, approved restart plan. And it's a visual depiction of the concepts used to build the restart effort. And the parts of this I'm going to talk to are over on the left and they're numbered blocks. But essentially in these blocks you have the system readiness reviews, the programmatic reviews, the functional area reviews, and the containment system reviews. These are these four blocks here. These blocks then feed into a management oversight review panel system including the SERB and the ROC, and I'm going to speak to those directly, briefly.

The remainder of the visual depiction is devoted to after we've identified the appropriate restart work scope for restart then we manage our resources time and energies to completing those restart activities. So that gives you a little bit better understanding of how that picture supports the restart plan.

The restart plan is a disciplined and rigorous method of examining our plant, the programs and human performance for issues like those identified during the architect engineer and ice condenser inspections.

Our formal restart plan was initiated on March 7th

of this year and is similar to plans used successfully at other plants. Our restart plant exam is the plan through our system readiness reviews which is one of the blocks on the left-hand side. It examines our programs through our programmatic readiness reviews and examines our human performance through the functional area readiness reviews.

The issues identified from our system readiness reviews are brought to the attention of the System Engineer Review Board or SERB which makes a recommendation to the Restart Oversight Committee or ROC as to whether the issues should be resolved prior to restart or following restart. The ROC is then responsible for determining the restart work scope using consistent standards and approved criteria as documented in the formal restart plan. In similar fashion, issues identified during the functional area reviews and the programmatic reviews are referred directly to the ROC for their evaluation and application of the approved restart criteria.

This restart plan process is being overseen by a Senior Management Team or SMRT which includes myself, the chief nuclear engineer, the director of performance assurance which is our quality assurance group and the director of regulatory affairs.

Next slide, please?

So I've given an overview of the restart plan.

The next activity to look at it is the issue of self-identifying and correcting issues. One of the most important elements of this effort are the reviews we are performing of our systems which I will now describe.

Our system reviews include a review of the containment systems by an independent contractor and system readiness reviews performed by our engineering, operations and maintenance personnel. In addition to describing these reviews, I will discuss our plans to measure the effectiveness for system reviews.

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So let me first describe or discuss the independent inspections that we have performed on our containment systems. American Electric Power with the assistance of experienced contractor personnel performed an independent assessment of selected containment systems for material condition and functionality issues.

This assessment included a system review to provide reasonable assurance of conformance with the design basis documents, regulatory commitments, the effectiveness of the technical specification surveillance procedures in monitoring the material condition of this system.

We also made a decision based on lessons learned from the architect engineer inspection to perform a safety system functional inspection of our containment spray

system. This inspection assessed our containment's spray system's ability to perform its intended safety function and the adequacy and the conformance of the system with respect to the design basis and regulatory requirements.

The issues identified during these inspections are being addressed by the restart plan.

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In addition to the independent containment reviews, we are using a graded approach to perform system readiness reviews. The systems included in the review are required to support power production or to mitigate or monitor the consequences of a accident. The objective of our system reviews is to determine if a system meets the functional design requirements has been suitably tested and is ready to support safe, reliable startup and operation.

The maintenance rule which provides a pre-existing classification of systems into risk-significant categories was used as a basis for assigning appropriate review levels to each of the systems. Various probabalistic risk assessment results were examined to provide additional assurance that our maintenance rule system classification did not exclude important systems.

Twenty-one systems were selected for the most comprehensive reviews which we call level-one reviews. These 21 systems include risk-significant maintenance rule

systems, but also include some important non-risk-significant standby maintenance rule systems based on our management judgment.

Level-two reviews are being performed on maintenance rule systems classified as non-risk-significant, and finally, level-three reviews are being performed on systems which are not even covered by the maintenance rule.

There are some systems which do not impact our operation or accident mitigation or monitoring such as office building ventilation and lighting which we have chosen to exclude from our reviews. Our level-one and -two reviews will capture all safety-related systems.

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As illustrated by this slide are reviews examined both material condition issues and design basis attributes of our level-one plant systems. We reviewed the material condition aspects of the 21 level-one systems by performing a number of activities which I'll list here. We first walked down the system by an interdisciplinary team composed of engineering maintenance and operations to verify that the system has been maintained in good working order.

We conducted an evaluation of outstanding condition reports for impact on material condition. We reviewed corrective and the preventive maintenance backlog for the affected system. We reviewed the maintenance rule

system performance and we reviewed any open operability determinations which are in effect on that system.

Now, did they take a look at the design basis aspects for the 21 level-one systems we performed the following activities. We conducted a review of the design requirements as stated in our updated final safety analysis report and the technical specifications. We reviewed surveillance testing performance to demonstrate the system can meet its functional design requirements. We reviewed pre-operational testing. We reviewed design modifications currently in service as well as design modifications which have been approved but not yet installed. We reviewed temporary modifications which are currently in service. And we reviewed technical direction memos issued by the engineering department and reviewed industry operating experience.

We invested over 15,000 manhours performing our level-one system reviews to date. This does not include any time spent on issue resolution.

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Level two reviews are being conducted under the plant engineering functional area review of the restart plan. These reviews include examination of condition reports, review of corrective and preventive maintenance backlogs, a review of maintenance rule system performance, a

reference of operability determinations and effect, a review of design changes, and temporary modifications in service.

Level three reviews included initial examination condition reports and maintenance backlogs. The results of the level two and three reviews will be evaluated to determine of more extensive reviews are required on these systems.

We are now tracking over 4200 identified issues in our database as a result of the reviews performed since the implementation or our restart plan. We have carefully evaluated these issues on a one-by-one basis using the screening criteria in our restart plan.

In addition, items were reviewed for their aggregate effect. For example, an individual item may not alone meet the restart criteria, but several related items considered together may indeed fit under the restart criteria. Approximately 700 items currently meet the criteria for restart.

We are confident that our reviews are finding issues of substance and our plant will be better for having identified and resolved these issues. I would like to describe just two of the many examples that illustrate this point. An example of an issue we discovered during our system reviews involves the emergency diesel generator auxiliary relays. These relays are used for sequencing the

essential service loads. We are performing surveillances to test the overall circuit, but not the three individual parallel relays in this circuit. Even though only one of the three parallel relays is needed to accomplish the required function, we were missing an opportunity the verify that the circuits in the system were being maintained with their full redundant capabilities.

Our corrective action included performing a test of each of the individual relays. These tests have been completed satisfactorily. Our surveillance practices were changed to include periodic inspection of the individual parallel relays and not just the overall circuit.

Next slide, please?

Now, the questioning attitude used in the system reviews is also being reflected in our daily activities. Concurrent with our system reviews an engineer performing a periodic inspection of our containment heat exchanger -- containment spray heat exchangers noticed that the flow impingement plate on one exchanger was not in the expected location.

Questions were asked that led to the realization that one containment spray heat exchanger was incorrectly oriented during original installation. We are now taking action to rotate the heat exchanger into the proper orientation. We are also performing an evaluation to

determine of the previous installation resulted in unacceptable degradation of the heat exchange tubes. Additionally, we expanded our review horizontally to check other plant heat exchangers for similar issues.

These two discoveries represent examples of success stories that indicate progress in an effort to improve our plant and human performance. We are confident that our reviews have sufficient breadth and depth to provide reasonable assurance that the systems important to safety will perform their intended function. However, our questioning attitude causes us to test this confidence.

I will now discuss how we plan to measure the effectiveness of our system readiness reviews.

Next slide, please?

Following our level one system reviews we decided to perform an additional safety system functional inspection. We made this decision for the following two reasons: First, the results of the safety system functional inspection will provide a measure of the effectiveness our safety system reviews. Secondly the results of the inspection will be useful for design basis document validation.

Performing this SSFI will also allow us to further develop our in-house, self-assessment capabilities. We chose the auxiliary feedwater system for this functional

inspection for a couple of reasons. This was because the system has already received one of our level one reviews. it is a complex system. It has undergone numerous modifications since original installation. And, finally, it has a Westinghouse/AEP design interface similar to that of our containment systems. This made it a good system to select for the SSFI.

The safety system functional inspection is scheduled to begin in early September. We reevaluate our system reviews and make scope adjustments as warranted by the results of this inspection.

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Next, I will discuss our UFSAR revalidation efforts.

Next slide, please?

Mr. Lochbaum has stated that 13 of the 22 systems now being reviewed had been extensively reviewed by AEP in the early 1990s. He is referring to the design-basis document project, but I believe that there is a misinterpretation of that program. The DBD program was essentially an effort to compile documentation of the design basis for systems. The program did not do the sort of assessments that we are now performing and that I've just described. We are factoring the lessons that we have learned and the results of our restart activities into our

design basis reconstitution project.

This project integrates our former DBD program with our operations procedure upgrade program and the UFSAR revalidation program which I will describe next.

We are conducting a line-by-line -- a line-by-line revalidation of our updated final safety analysis report using an independent team of consultants under the direction of AEP. The restart plan scope was recently expanded to include a requirement to complete the revalidation effort prior to restart for the 21 systems receiving the level one reviews.

For the remainder of the updated final safety analysis report the line-by-line revalidation will continue beyond restart. Identify discrepancies that meet the condition report threshold whether from one of the 21 or other systems will be resolved prior to restart. Our resolution may include any one of the following actions: we may correct the nonconformance; we may perform a 50.59 evaluation; we may perform an operability evaluation in accordance with Generic Letter 91-18; or, last, we may submit a license amendment.

Our first choice though when resolving identified nonconformances will be to pursue correction of the discrepancy rather than to request a license amendment.

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It is important to us that we improve our programs to prevent recurrence of the issues such as those raised during the architect engineer and the ice condenser inspections.

I will now discuss the programmatic readiness reviews performed under the restart plan.

Next slide.

Root cause analysis of architect engineer and the ice condenser inspection findings indicated a need to review our program controls. The programmatic readiness reviews support our goal of preventing recurrence of system design basis and material condition issues. These reviews are included in the restart plan.

An integrated multi-disciplinary team which we call the architect engineer programmatic issues team was formed to carry out these reviews. The review examined program areas of design control, 50.59, calculations, corrective action, developing and maintaining procedures, use of operating experience, quality assurance related to the architect engineer-related issues, and instrument uncertainty. Separate from this initiative an additional evaluation was also performed on the surveillance program.

Programmatic issues identified during the unit shutdown have been evaluated and appropriate corrective and preventive actions are being implemented. The details of

our programmatic reviews including design control were described in our 2.206 letter dated July 31, 1998.

Today I will use my time to focus on the areas of the Petitioner's concerns relating to our 50.59 and the calculation programs. We have evaluated the process used to perform 50.59 reviews including safety screenings and safety reviews as well as the controls in place to ensure that the 50.59 process is not bypassed.

We have performed two self-assessments of safety screens and reviews performed under our old program and a self-assessment of possible 50.59 bypass mechanisms. Based on these reviews we have reasonable confidence in the results of our screens and our safety evaluations. These conclusions have been validated through an independent contractor's review of our own self-assessments. We will, however, continue to assess the findings from other restart activities.

We have consolidated our 50.59 procedures and performed enhanced staff training using a noted industry expert. We have established a single 50.59 program owner and communicated clear management expectations.

Finally, we have established an enhanced performance monitoring program to evaluate the effectiveness of our 50.59 program going forward. The performance monitoring program focuses on quality and assigns letter

grades to safety reviews and screens. Feedback from this program is provided to the safety screening and the review authors as a means of elevating performance consistent with our higher established expectations.

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Calculation discrepancies were identified as a major contributor to issues that arose during the architect engineer inspection -- excuse me -- and were therefore evaluated in our initial short-term assessment.

First, the specific calculation deficiencies noted in the architect engineer inspection were bounded by a review of similar calculations to establish reasonable confidence that similar problems do not exist elsewhere.

Second, the engineer peer reviews were implemented to assess technical adequacy of new calculations prepared in conjunction with resolution of any of our restart items.

Third, a sample of 20 existing functional calculations for seven risk-significant systems was peer reviewed to further assess the nature and extent of problems in our existing calculations. The primary focus of this initial review was to determine if deficiencies led to equipment or systems being inoperable.

Because of continuing concerns about whether the initial reviews adequately bounded the problem of deficient calculations the calculation sample was subsequently

expanded to 81 calculations covering additional risk-significant systems. Additionally, the review effort was enhanced and included systematic and a procedurally controlled review of overall quality, the level of detail, the completeness, conformance to current industry standards, and technical accuracy.

The sample calculation were selected using a methodology intended to provide a reasonable level of confidence that the overall population did not contain a discrepancy resulting in inoperable equipment or systems.

Although we are still resolving some of the technical issues associated with the calculation reviews, no discrepancies have been identified that result in equipment or systems being considered inoperable. However, we have identified administrative and minor technical deficiencies in calculations in the sample and therefore are making improvements in our calculation program to avoid similar problems in the future. Key improvements include the establishment of clear program ownership, formal training of engineers performing calculations, and communication of management expectations for improved calculation quality.

New or revised calculations are being subjected to a peer or a consultant review pending implementation of additional program enhancements. We have already seen improvements in the quality of new calculations that are

being performed.

Notwithstanding our confidence the existing calculations appropriately support equipment and system operability. We are currently evaluating the results of our calculation reviews to determine if additional actions are needed. We are committed to doing the right thing and will expand the scope of our calculation reviews if warranted.

Our longer-term plans include upgrading the calculation index to provide more detailed information on the unit relationship of calculations to other plant documents and benchmarking external design organizations for calculation development practices and quality improvement.

Finally, performance assurance is modifying their audit plans to place more emphasis on the review of calculations. Specifically to challenge calculation inputs, the assumptions, and quality.

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For the last part of my presentation I would like to speak briefly to the comprehensive corrective actions we are taking with regard to our ice condenser at the Cook plant.

Next slide.

Our decision to commit the time and expense to thaw both of the ice condensers represented a key turning point in the current outage and was a major event indicative

of our commitment to do the right thing. Our corrective actions performed on our restart plan are comprehensive. Before the restart plan is complete, we will have performed an inspection of 100 percent of our ice baskets and repaired or replaced over 2,000 ice baskets. We will have inspected 100 percent of our ice basket screws, we will have performed metallurgical testing and will replace all damaged or missing screws. We will have replaced our lower inlet door shock absorbers with better quality air boxes. We will have performed ultrasonic testing of the ice condenser floor for water intrusion and taken action to prevent occurrence of the industry problems with our lower inlet doors.

We have inspected the ice condenser intermediate deck and are making door repairs. We have made -- we have removed significant foreign material from the ice condensers. We are performing comprehensive walkdowns of each of the thawed ice condensers.

And, finally, as preventive actions we will have completed many new analyses, improved our surveillance and our maintenance practices, modified our procedures, improved our use of ice weight analysis software, and approved our contractor oversight.

We have already invested over 100,000 manhours improving our ice condensers and that investment will continue to grow. Our ice condensers will be fully capable

of performing their required safety functions prior to restart.

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In conclusion, we ask the Petitioner's request to suspend, modify, or revoke our operating license be denied for the following reasons: We exercised our own conservative decisionmaking philosophy when we shut down the plant last September. The plant will be maintained in a safe condition until ready for restart. We have implemented a rigorous restart plan which includes comprehensive corrective and preventive actions for improving our plant, our programs, and our human performance. In essence, our restart plan addresses virtually every action requested in the 2.206 request or the petition.

And, lastly, NRC processes are in place to provide appropriate oversight of our restart efforts. The NRC has issued a confirmatory action letter, established and 0350 restart panel, and they will continue to assess our efforts to the inspection process.

The restart plan is working. I am confident we are identifying our own issues, we are taking comprehensive corrective and preventive actions, and that our plant and organization are improving as we progress through this plan. We will not restart the Cook plant until we are convinced the plant is ready and our organization is ready.

We look forward to the continued discussions with the NRC through the 0350 process. And if there are any questions I would be pleased to address them.

Thank you.

MR. BOGER: Thank you. I turn it over to the NRC staff for questions of a clarifying nature.

DR. BELLAMY: Mr. Sampson, this is Ron Bellamy of the NRC staff, at the beginning of your presentation you made the statement -- and I may be paraphrasing a little -- that virtually all of the Petitioner requests affecting Cook were being implemented by you or your staff. And at the end of your presentation you said something to the effect of "essentially all". And my question is of anything in the petition that is under D. C. Cook as a licensee's control, are there any petition issues that you are not addressing? I want to make sure that there is nothing hidden in this little bit of -- you know, you're not saying 100 percent. I want to make sure that there's nothing hidden in there that you shouldn't put on the table for us today as we consider the petition.

MR. SAMPSON: Absolutely. It was said specifically that way because I really can't read into the Petitioner's request their comments about the system certifications at the other plants. We didn't call our system certifications, but we certainly have a rigorous

process for validating that the systems are indeed ready for restart. And it's a rigorous, lengthy detailed challenged process. But we didn't call it system certification, so I didn't want to presume what the Petitioner's request was about system certification. So that's why I said, "virtually all specific requests are covered"; there's no other new information to provide other than that.

DR. BELLAMY: Thank you.

MS. ADENSAM: Mr. Sampson, this is Elinor Adensam with the staff, just a couple of points of clarification. Could you identify -- you said, "selected system" -- containment systems were being reviewed. Could you clarify which selected systems?

MR. SAMPSON: Well, we -- I'm not sure I can enumerate them accurate enough to answer this in a public forum.

MS. ADENSAM: Okay.

MR. SAMPSON: You know, we didn't look previously at containment as an entire system, so when we set out to do this review, we wanted to take a vertical slice of the containment. We recognize that a lot of the problems that came out in the architect engineer were specifically related to the containment so it seemed appropriate to us to go out and look at as many pieces of the containment system as we could in a vertical slice fashion, and so we did extensive

walkdowns, just of the physical structure of the containment itself, inside and out.

Everybody's okay, right?

[Laughter.]

MR. SAMPSON: We're all still here. I did have a line of thought here.

[Laughter.]

MS. ADENSAM: I understand why you may have lost it.

MR. SAMPSON: We looked at the physical structure, we also looked at things like hydrogen recombiners, we looked at our CEQ system which was one of the systems that we self-identified a problem with. We tried to look at as many features of the containment system itself in a vertical slice attribute and we used an independent contractor with us because that was one of our early efforts to make these extensive reviews, so we wanted to make sure that we were on the right track. We used them for one unit and then we went and did ourselves a second unit. So the idea of this restart plan is more than just hardware, it's behaviors that we're trying to learn. And so we used each one of these self-assessments on the system to practice the right behaviors and tried to use outside influence to make sure that we were really meeting today's current standards.

MS. ADENSAM: Along those same lines, I had a --

you mentioned that your level one reviews you looked at 21 systems. I thought I also heard you say that all safety-related systems in level one and two were going to be reviewed in your system readiness reviews. I did not hear you say how many systems were at the level two. Perhaps -- could you clarify that?

MR. SAMPSON: I'm not sure I can tell you the number for how many are in level two.

MS. ADENSAM: Okay.

MR. SAMPSON: Can somebody tell me the physical number? The intent of my statement was to say that if you take level one and level two systems in aggregate, there will be no safety-related systems not covered in one of those system readiness rvs.

MS. ADENSAM: Okay.

MR. SAMPSON: That was the intent.

MS. ADENSAM: Okay.

MR. SAMPSON: Dan Hafer says the number is in the mid-forties for the level two reviews.

MS. ADENSAM: Oh, okay. Thank you. I just didn't know whether it was one or 100, you know.

MR. SAMPSON: Right. Mid-forties.

MS. ADENSAM: One other point of clarification, this is my education as much as anything else, I understood you to say you were going to rotate your heat exchanger?

MR. SAMPSON: That's correct.

MS. ADENSAM: Can you give me just a brief of what that involves?

MR. SAMPSON: This is -- the misorientation is the in and the outs were connected wrong. So this is about cutting piping and physically reorienting 180 degrees to get the in and out. The deficiency was discovered through a handhold inspection that impingement plate for the inlet water to the tubes was on the outlet side. And it's designed to prevent degradation of the tubes because of the inlet flow. And misoriented in the original installation so we'll be cutting piping, lifting, rotating and rewelding pipe appropriately for --

MS. ADENSAM: So it's the body of the heat exchanger itself --

MR. SAMPSON: That's correct.

MS. ADENSAM: -- you're physically rotating, you're not just changing piping?

MR. SAMPSON: No.

MS. ADENSAM: Okay. Thank you.

MR. GROBE: This is Jack Grobe. Mr. Sampson, just a couple of questions to clarify your presentation. You indicated that you earlier performed a safety system functional inspection on the containment spray system. Could you identify the scope and nature of the findings of

that SSFI?

MR. SAMPSON: I don't have specific examples to give you, but the CTS inspection was lengthy, it was thorough, there were numerous findings from small to large. Some of the more significant ones were related to vibration associated with a pump under normal testing configuration. We don't have full-flow capability of our pump and so one of the issues we have to resolve is to make sure that in our testing configuration the vibration is not to high for the accident conditions or long-term degradation of the pump. But the actual CTS inspection and the final report hasn't actually been finally issued, but there were a number of condition reports written, action requests written, and all of those are fed into the restart plan again, and each one is singularly reviewed against the restart criteria and those things that meet the restart criteria will be corrected prior to us calling that system operable in restart.

MR. GROBE: Did the findings of the SSFI of containment spray reveal that the system was operable?

MR. SAMPSON: Inoperable.

MR. GROBE: Inoperable.

MR. SAMPSON: The containment spray system was inoperable as a result of the SSFI.

MR. GROBE: A question of clarification on your

example in the emergency diesel generator relay testing. Had you completed your review regarding Generic Letter 96-01 on that circuitry? Did that cover the diesel generator relay testing?

MR. SAMPSON: I can't answer that question. I have to get back to you on that. I don't know if we have that.

MR. HAFER: That was a 96-01 type issue. I can't really answer whether or not that was looked at directly in disposition or otherwise earlier. We had recognized this was 96-01 type issue though when we found this.

MR. SAMPSON: Can we get that specifically back to you to let you know whether 96-01 was dispositioned on this circuit before -- or not -- we discovered this problem?

MR. GROBE: Yes, we'll follow up on that also.

A question regarding your calculation review. You performed some initial reviews and rendered some judgments on the adequacy of your calculations and then you decided to expand -- I believe that was 20 calculations on seven risk-significant systems. You then indicated that you decided to expand the scope of calculation reviews. Why did you decide to expand the scope, and how was the scope and the number of calculations selected for this expanded review?

MR. SAMPSON: Well, there are two questions there,

why and how selected; right? In the early part of our shutdown, our attention was directed at trying to answer the confirmatory action letter items. And so our initial sample, the 20 calculations we selected seven systems that we felt had significant risk consequences. We chose 20 calculations at random from the functional calculations that applied to those seven systems and did those reviews.

Now, the conclusions of those reviews were that although we found problems from beginning to end the administrative and technical problems in the calculations is consistent throughout. The level of quality in our calculations is consistent throughout. We have minor technical and administrative problems in these calculations. And that original sample of 20 determined that, but not one of those led to inoperability on those seven systems

However, we felt it was prudent based on those -- the technical nature of those calculations that we expand that sample to look at additional calculations. So we took all -- we took all of the functional calculations which is 200 and some calculations and selected another 64 calculations and went back and rereviewed those original 20 -- I apologize if the numbers don't add up quite right, but the essence of it is, we rereviewed the original set of calculations and another set selected to make sure that it was a significant number of calculations looked, and

although we biased the sample to make sure that it was of safety-significant systems, it was intended to be large enough and broad enough to make sure that we could rely on that sample and make a conclusion on it. And we yet haven't finished our determinations to whether that original or the expanded scope has been sufficient, we're still looking at that.

MR. GROBE: One more question of clarification. You indicated that you had decided to do an additional safety system functional inspection. What was your basis for deciding that you needed additional review?

MR. SAMPSON: Well, a lot of the restart plan rests in the quality, the depth, the breadth of those system reviews. From a plant hardware standpoint a lot rests on the validity of those 21 system reviews. We need to have those be right and we need to have a high level of confidence that there aren't significant problems in those 21 systems. So, you know, we've gotten done with the most of that work. It's now time to second guess what we've done there and we felt an SSFI would be an appropriate action to take and that would either validate or invalidate how good we've done on those original 21 systems. And based on the results with SSFI, if there's more work to be done on going back and looking at those 21 systems, the SSFI will give us an indicator whether they were good or not. So that's where

we wanted to go with that.

MR. GROBE: Okay. One final question. The Petitioner raised several issues regarding effectiveness of responding to information brought to your attention and you indicated just briefly on one of the slides that corrective action is an area, I think one of your program area assessments, but you didn't expand on that. Could you clarify your view of the corrective action system effectiveness and the nature of the review that you're conducting?

MR. SAMPSON: Well, the corrective action program obviously is really important to us and it's got to be a good process when we restart. And so at one time we actually considered ourselves pretty capable when it came to the corrective action program. We had, I think, something that you would find a quality of our people at Cook is a willingness to identify problems and I'm really thankful for that. So there was a time when we were an industry leader in terms of numbers of condition reports we were writing. But what we're doing now is seeing that we can do more and we can encourage people to identify more problems. So we've gone from an age when we were writing 2- to 3,000 condition reports a year to 6-, 7-, 9,000. We're writing about five or maybe as many as 700 condition reports a month now.

We've increased the management oversight of that

process. We've increased the line manager accountability for their performance in evaluating those conditions. And I think one of the key things we're doing now is we're doing fewer root causes on more important problems. We took great pride in doing too many root causes on too many problems. And that was deluding the effectiveness of those root cause evaluations. And we've also now put in place a group that has specific ownership for care and feeding of the process of corrective action programs.

But prior to restart, you know, all these changes are changes, right? Any one of these changes can introduce it's own set of problems. So one of the challenges for us will be to measure the effectiveness of these changes prior to restart and demonstrate to ourselves before we restart that we're confident the process is working appropriately.

Now, having said all that, I'm not sure I got to the heart of your question.

MR. GROBE: The question was, your view of the effectiveness of the corrective action program. I think you addressed the improvements that you're making and what you're evaluating.

MR. SAMPSON: Okay. I'm really pleased -- now I can be more specific, I'm listening more carefully.

I'm very pleased with the rate at which we're identifying conditions. I'm very pleased that we're writing

more condition reports on different types of problems. I'm very pleased that we now have the basis for performance indicators that are indicating the health of the process that we didn't have before. I am very happy with the action plans and the accountability that we have in place to improve our process. In other words, we're not done and we have a very good set of action plans that will help us improve this. I'm very happy with the training that we've done, we've been doing a lot of training over the last six months, and the corrective action program is one of the areas where we spent a lot of time training in terms of root cause evaluations, common cause analysis, how to do a better analysis in less time of more problems. Meaning just having 7,000 to 9,000 condition reports to evaluate is a problem in itself, and if you don't do that right it will dilute the effectiveness of the corrective action programs.

So there are many elements that I'm very pleased with, but it would be inappropriate for me to claim success today until the organization has a chance to evaluate that appropriately.

MR. GROBE: Okay. Thank you.

DR. BELLAMY: Bellamy, NRC, I have an additional clarification question if I could. In your discussion of the 21 system readiness reviews you indicated that you were supplementing your staff with consultants and your

discussion of the calculational checks that were being done, you indicated that you were supplementing your staff with independent contractors. I'm not suggesting that there's a difference in these two groups, but the clarification I need is how independent are these additional staff that you're relying on in terms of -- in terms of maintaining responsible products to us and basically who owns the responsibility and who owns the authority in terms of trying to get some independent work out of them?

MR. SAMPSON: Okay. We recognize that it depends on how independent they are. Sometimes you use independent contractors just to supplement staff to increase your ability to do more work. And they do bring something to the table in terms of, you know, if they had been in another plant recently, they bring current experience to us to help us judge our performance against, but that in terms of assessing the validity of our results is really not independent. So we've used independent contractors in a number of different locations to help us do both staff augmentation and independent oversight.

In other words we've done -- we've brought independent contractors into the performance assurance or our quality group to help us provide independent oversight. We have independent contractors who report directly to the chief nuclear officer to advise on the health and well-being

of our restart process. We've used independent contractors, sometimes we actually give them our work and say, grade us, tell us how we did. I mean, we're specifically paying them to give us constructive criticism on that feedback. So, there's a balance of things going on here and all of them are of some benefit in terms of helping us upgrade our own standards.

DR. BELLAMY: I think what I heard was "all of the above"?

MR. SAMPSON: All of the above.

DR. BELLAMY: That in some cases you're using additional staff simply to perform jobs that you assigned to them. In other cases you're handing them finished products and saying, perform an independent assessment of this and basically go outside your chain and let more senior management know the results of that?

MR. SAMPSON: Well, the --

DR. BELLAMY: Or does the buck stop here?

MR. SAMPSON: Well, the buck -- until recently I was the chief nuclear officer, so the buck kind of stopped here. But the idea is the performance assurance organization should be able to raise concerns directly to me, but we always encouraged line management ownership of those problems, direct interface; but, you're right, all the above is appropriate.

You did seem to imply that I said we used independent contractors on the 21 system reviews. And I don't think I said that. We try to keep that in-house although we did a lot of training and qualification before we started. We tried to keep it in-house because we wanted to develop the ownership and the expertise and those people doing the system reviews. So that was one where we kind of said, we've got to do this ourselves, we've got to stand up and be responsible.

MR. POWERS: Ultimately, although the use of the -- I'm Bob Powers, by the way -- ultimately the responsibility for the quality of the calculations or the quality of the system reviews is EEP's responsibility. And although the use of independent individuals are useful in building an understanding of how we're doing in that regard the buck stops here. We're ultimately responsible for the quality of our work and that's what we intend, not only in the support of the more immediate issues concerning restart, but also for the long-term operation of the facility.

DR. BELLAMY: One of the concerns that we heard earlier was -- and really a basis for my clarification was one of the concerns we heard earlier was the necessity that staff is ready, willing, and able to come forward with safety significant issues. And I was trying to probe to make sure that, yes, there was independence that they could

do that, but at the same time there was still a person that we can go to at any time and say, who is in charge here?

MR. SAMPSON: Correct.

DR. BELLAMY: Thank you.

MR. BOGER: I had one question, and it's related to the fifth concern that the Petitioner raised in the addendum. And it has to do -- it's a little backward looking, it has to do with the response to the 50.54(f) request for information by the NRC.

MR. SAMPSON: Yes.

MR. BOGER: Could you give me your reaction to that, and your response to that?

MR. SAMPSON: I don't remember exactly what the Petitioner's concern is, but I think I understand the nature of it. And one of the reasons we're here today, and we reported to the NRC in our December meeting and other meetings was our failure to appropriately understand the design basis when we were doing certain evaluations. When we submitted our 50.54(f) response, we submitted it under the current understanding that we had at the time and we believe that it's still accurate as long as the programs that we submitted under the 50.54(f) are doing their jobs. So our intention is to make our programs and processes do their job and protect the design basis. And also the validate that the systems are meeting the functional

requirements of the design basis.

So, if the programs and processes are doing their jobs to make sure this never happens again at the Cook plant and if we walk away from this outage having done an appropriate validation that the systems meet those functional requirements, the submitted 50.54(f) response is sufficient.

So we learned a great deal through this whole process and learning every day. You know, that's a good thing, a very difficult experience. But our intention is to make our systems and our processes do exactly what we said and committed to the NRC that we would do in our 50.54(f) letter.

MR. BOGER: Are there any other staff -- NRC staff questions?

[No response.]

MR. BOGER: Okay. A this point in time what I'd like to do is ask if there are any members of the public that would like to make a comment related to the petition?

[No response.]

MR. BOGER: I see no one coming to speak. So we'll move on to the next stage of the proceeding which is to ask the Petitioner and the licensee each to provide closing comments.

Mr. Lochbaum?

MR. LOCHBAUM: Thank you. I'd like to -- before I get started with closing comments -- make a few observations. One, there was some discussion of the manual 0350 process. I think it's important for the record to note that this manual 0350 process was established after the January 12, 1998 supplement to our petition. So we didn't enter into the petition process with knowledge that that was going to happen. I'm not going to determine what the chicken and the egg situation was, what prompted what, but for the record I need to note that that wasn't on the table when we issued the petition or its supplement.

Second, there was some talk about the CAL response, the confirmatory action letter response. Actually, it was a series of responses. You know, in our presentation we pointed out that that CAL response from December said that everything was okay or tracking to okay, and sought permission to restart. Subsequent events showed that that wasn't -- it was at least optimistic if not a little more serious, perhaps a material false statement. But we would like the NRC to look at that issue and determine whether it was optimistic or perhaps a little more -- a little stronger.

Third, I think also it's important to note that UCS is not really wanting to modify, suspend or revoke the license. What we are really wanting is the systems to be

ensured that they were safe before the plant restarts. But members of the public don't have any opportunity to ask for things like that other than through 2.206. And you have to pick one of those verbs, if you don't pick the right one, the petition will be rejected, so we had all three of them.

And it's like the shell game, if we pick all three shells, we're going to get that pea. So that's why we did that. We were not actually trying to revoke or suspend the license, we just wanted the systems to be evaluated. But that's the only way we have to seek that kind of action.

As far as the closing remarks, some of the observations, I didn't see much discussion of why D. C. Cook didn't find either the NRC architect engineer problems or the ice condenser problems itself. It's relatively easy to fix problems that are pointed out by somebody else. The licensee also has the obligation to find the problems themselves. The NRC, in theory, when they come in to conduct an investigation should find no problems, and that theory didn't work out too well in practice. So I think I'd feel better if I had better confidence at self-assessment or self-identification of problems was going to occur in the future.

Also didn't see much discussion of why D. C. Cook did not heed the repeated warnings about fibrous material and there was also warnings about the procedure change in

some of the other issues. I mean, as I understand the purpose of the enforcement notice process, that's to tell licensees about problems so they can make sure that they've addressed those issues in-house and that process apparently wasn't working or a decade or roughly a decade.

I'm in no position to gauge the sincerity of the comments made today as far a the assurances for the future, I hope they're sincere and I have no reason to doubt that they're not. But also I have -- they sound remarkably similar to the assurances that were made in February of '97 in response to the 50.54(f) letter and also in a December '97 to the confirmatory action letter.

There is a big difference today and it's important to note that. The system evaluations that are going on the fixes to the ice condenser that are going on are different. And it makes the assurances in a different context than the earlier assurances. So that's clearly a positive and we want to recognize that. At the same time the downside from that is if you look at the list of physical plant changes and administrative process changes, that's a very long list. It's a very long list.

The question comes, what does that say about the safe operation of D. C. Cook before September of 1997 when the containment spray system was broken and when the ice condenser was degraded and all these other problems were in

effect at this plant?

Safety isn't supposed to be something you're capable of achieving, it's something you're supposed to have reasonable assurance of, and there wasn't when this plant operated in the past. That fact is the reason we think -- no, it's a given that you have to make the corrections to the plant before the plant is restarted. I don't think anybody will debate that one.

We think it's also important that a meaningful civil penalty be imposed so that there is added encouragement or incentive for not repeating the sins of the past. The people who live around these plants want that assurance and don't want to question that assurance. And they need to know that they have a regulator out there that's looking after their interests.

In closing I'd like to -- I pointed out that Ann Harris lived within the evacuation distance of Watts Bar. Watts Bar is in Tennessee. She made a long trip to come up here and help me out today and I really appreciate that. Also even though the trip for Jim wasn't as far, I still appreciate it. Usually I'm alone at these presentations, so it's helpful to have some assistance.

Most importantly I'd like to acknowledge even though the person isn't here today, the TVA whistle-blower. He answered every question I had, provide me plenty of

assistance, was there to fulfill every need, he sacrificed his career to bring these issues forward and I would like him to know that at least we appreciate that effort.

Thank you.

MR. BOGER: Thank you, David.

Licensee's, Mr. Sampson or --

MR. SAMPSON: Mr. Powers.

MR. BOGER: Mr. Powers.

MR. POWERS: Good morning. I'm Bob Powers. I have recently joined American Electric Power as senior vice president and chief nuclear officer for the Cook nuclear plant.

We are not going to respond to Mr. Lochbaum's statements concerning an appropriate civil penalty this morning. That matter is before the Office of Enforcement and does not, I believe, relate to the requests in the UCS petition.

However, I do want to thank the NRC for the opportunity to present our views on the concerns raised in the 2.206 petition. We have taken those concerns very seriously and we fully appreciate the importance of maintaining our plant's safety and compliance with the design basis.

I believe I heard Mr. Lochbaum state this morning that we're addressing the issues raised in the 2.206

petition and I agree, we are doing the right thing at the Cook plant.

Our commitment to safety and compliance is reflected in our initial decision to shut the plant when questions were raised during the architect engineering design inspection and in the extensive and comprehensive assessments and corrective actions that we are currently performing.

As was described here today, and as is described in more detail in our written response, our efforts have included reviews of plant systems with particular emphasis on those that are risk significant to provide that reasonable assurance that they are in conformance with their design basis.

In addition, we've taken a hard look at the programmatic implications of the architect engineer design inspection findings and of our own findings and have instituted many changes to make our programs more effective in maintaining both plant safety in the plant's compliance with regulatory requirements. I'm confident that these actions and the other activities in our restart plan address and resolve the issues that UCS described in its 2.206 petition.

Further, we believe that the NRC 0350 process and the staff's guidelines for restart approval provided

sufficient and independent framework for assessing the adequacy of our actions.

You may recall from the description of our restart plan that my authorization is necessary to determine the plant's readiness for restart. I assure you that I take that responsibility very seriously and we will not start up until I am assured that we have thoroughly completed the restart plan so that there is reasonable assurance that the systems and processes important to safety will be capable of performing their intended functions at the time of restart and in the long term.

And just like members of the other panel, I also have lived, for many years, within the evacuation zone of a nuclear power plant along with my family and I take these responsibilities very seriously.

Thank you very much.

MR. BOGER: Thank you.

I'd like to thank all of the participants this morning. I appreciate the travel that both sides of the table undertook, region included. It's important for us to have these interactions, it's worthwhile information, it's information that we will consider in our decisionmaking process in responding to the petition.

This concludes the informal hearing.

[Whereupon, at 11:00 a.m., the public hearing was

adjourned.]